January 2004

Test 1836: New Holland TC 48DA Diesel

NEBRASKA TRACTOR TEST 1836
NEW HOLLAND TC 48DA DIESEL
12 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP *(kW)*	Crank shaft speed rpm	Gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—611 rpm)					
40.98 *(30.56)*	2800	3.36 *(12.72)*	0.576 *(0.350)*	12.19 *(2.40)*	
Standard Power Take-off Speed(540 rpm)					
38.56 *(28.75)*	2477	2.95 *(11.18)*	0.538 *(0.327)*	13.06 *(2.57)*	
VARYING POWER AND FUEL CONSUMPTION					
40.98 *(30.56)*	2800	3.36 *(12.72)*	0.576 *(0.350)*	12.19 *(2.40)*	Air temperature
36.61 *(27.30)*	2941	3.03 *(11.48)*	0.582 *(0.354)*	12.07 *(2.38)*	77°F *(25°C)*
27.97 *(20.86)*	2980	2.39 *(9.06)*	0.601 *(0.365)*	11.69 *(2.30)*	Relative humidity
18.74 *(13.97)*	3006	1.92 *(7.28)*	0.720 *(0.438)*	9.75 *(1.92)*	26%
9.36 *(6.98)*	3027	1.45 *(5.50)*	1.090 *(0.663)*	6.44 *(1.27)*	Barometer
0.63 *(0.47)*	3044	1.11 *(4.21)*	12.339 *(7.506)*	0.57 *(0.11)*	28.86"Hg *(97.73 kPa)*

Maximum torque 96 lb.-ft. *(130 Nm)* at 1602 rpm
Maximum torque rise - 24.8%
Torque rise at 2206 rpm - 14%

TRACTOR SOUND LEVEL WITHOUT CAB	Front Wheel Drive Disengaged dB(A)	Front Wheel Drive Engaged dB(A)
At no load in 7th (M3) gear	92.0	92.0
Bystander	--	--

TIRES AND WEIGHT	Tested Without Ballast
Rear Tires–No., size, ply & psi *(kPa)*	Two 18.4-24; 8:12 *(85)*
Front Tires–No., size, ply & psi *(kPa)*	Two 12-16.5; 8;12 *(85)*
Height of Drawbar	17.0 in *(405 mm)*
Static Weight with operator– Rear	2650 lb *(1202 kg)*
– Front	1840 lb *(835 kg)*
– Total	4490 lb *(2037 kg)*

Location of Test: Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln Nebraska 68583-0832
Dates of Test: April 27-30, 2004

Manufacturer: CNH America LLC, 700 State Srteet, Racine, Wi. 53404

FUEL, OIL and TIME: Fuel No. 2 Diesel **Specific gravity converted to 60°/60° F *(15°/15°C)*** 0.8432 **Fuel weight** 7.021 lbs/gal *(0.841 kg/l)* **Oil SAE** 15W40 **API service classification** CF-4/SG **Transmission and hydraulic lubricant** New Holland M2C134D fluid **Front axle lubricant** New Holland M2C134D fluid **Total time engine was operated** 12.5 hours

ENGINE: Make ISM Diesel **Type** four cylinder vertical **Serial No.** 28854 **Crankshaft** lengthwise **Rated engine speed** 2800 **Bore and stroke** 3.307" x 3.937" *(84.0 mm x 100.0 mm)* **Compression ratio** 22.4 to 1 **Displacement** 135 cu in *(2216 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil **Fuel filter** one paper element **Muffler** underhood **Exhaust** horizontal **Cooling medium temperature control** one thermostat

ENGINE OPERATING PARAMETERS: Fuel rate: 21.6 - 23.8 lb/h *(9.8 - 10.8 kg/h)* **High idle:** 2950 - 3050 rpm

CHASSIS: Type front wheel assist **Serial No.** HV10007 **Tread width** rear 52.8" *(1341 mm)* to 76.3" *(1939 mm)* front 56.4" *(1432 mm)* **Wheelbase** 74.8" *(1900 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph *(km/h)*** first 1.12 *(1.81)* second 1.52 *(2.45)* third 1.99 *(3.21)* fourth 2.56 *(4.12)* fifth 2.83 *(4.56)* sixth 3.84 *(6.18)* seventh 5.03 *(8.09)* eighth 6.45 *(10.38)* ninth 7.98 *(12.84)* tenth 10.81 *(17.39)* eleventh 14.14 *(22.76)* twelfth 18.15 *(29.21)* reverse 1.21 *(1.95)*, 1.64 *(2.64)*, 2.09 *(3.36)*, 2.76 *(4.44)*, 3.05 *(4.91)*, 4.13 *(6.65)*, 5.41 *(8.70)*, 6.94 *(11.17)*, 8.58 *(13.81)*, 11.63 *(18.71)*, 15.09 *(24.29)*, 19.53 *(31.43)* **Clutch** single dry disc operated by foot pedal **Brakes** single wet disc operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 2475 engine rpm **Unladen tractor mass** 4315 lb *(1957 kg)*

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: I, II
Quick Attach: None

Maximum Force Exerted Through Whole Range:	2776 lbs *(12.3 kN)* Category I	
	2430 lbs *(10.8 kN)* Category II	
i) Opening pressure of relief valve:	NA	
Sustained pressure of the open relief valve:	2460 psi	*(170 bar)*
ii) Pump delivery rate at minimum pressure and rated engine speed:	11.2 GPM	*(42.5 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	11.3 GPM	*(42.9 l/min)*
Delivery pressure:	1735 psi	*(120 bar)*
Power:	11.5 HP	*(8.6 kW)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi. *(bar)*	2565 *(177)*
Location:	lift cylinder
Hydraulic oil temperature: °F *(°C)*	178 *(81)*
Location:	hydraulic sump
Category:	I, II
Quick attach:	none

Category I

SAE Static Test—System pressure 2320 psi *(160 Bar)*

Hitch point distance to ground level in. *(mm)*	8.0 *(203)*	14.0 *(356)*	20.1 *(511)*	25.9 *(658)*	32.1 *(815)*
Lift force on frame lb	3832	3647	3433	3180	2789
" " " " " " *(kN)*	*(17.0)*	*(16.2)*	*(15.3)*	*(14.1)*	*(12.4)*

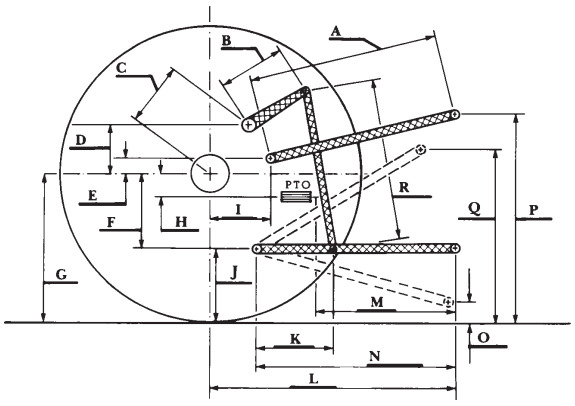
Category II

SAE Static Test—System pressure 2320 psi *(160 Bar)*

Hitch point distance to ground level in. *(mm)*	8.2 *(208)*	15.2 *(386)*	22.0 *(559)*	29.0 *(737)*	35.9 *(912)*
Lift force on frame lb	3439	3356	3143	2892	2305
" " " " " " *(kN)*	*(15.3)*	*(14.9)*	*(14.0)*	*(12.9)*	*(10.3)*

	Category I		Category II	
	inch	*mm*	inch	*mm*
A	23.1	*587*	23.0	*584*
B	11.8	*300*	11.8	*300*
C	13.5	*344*	13.5	*344*
D	13.5	*342*	13.5	*342*
E	10.3	*262*	10.3	*262*
F	5.2	*132*	5.2	*132*
G	26.0	*660*	26.0	*660*
H	0.5	*13*	0.5	*13*
I	12.2	*309*	12.2	*309*
J	20.8	*528*	20.8	*528*
K	14.2	*362*	14.2	*361*
L	34.6	*879*	34.5	*876*
M	22.9	*582*	22.8	*579*
N	31.5	*800*	31.4	*797*
O	6.6	*168*	6.9	*175*
P	38.9	*988*	39.9	*1013*
Q	34.1	*865*	34.5	*876*
R	21.4	*543*	21.4	*543*

HITCH DIMENSIONS AS TESTED - NO LOAD



REPAIRS AND ADJUSTMENTS: No repairs or adjustments

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. This tractor did not meet the manufacturer's claims of 3465 lb *(1571 kg)* 3 point hitch lift at 24" nor 12.0 GPM *(45.5 lpm)* hydraulic flow. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 104°F *(40°C)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1836**, November 1, 2004

Leonard L. Bashford
Director

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Board of Tractor Test Engineers

New Holland TC 48DA Diesel

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